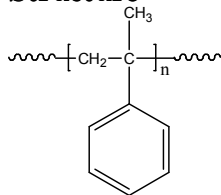


**Sample Name:** Poly( $\alpha$ -methyl styrene)

**Sample #:** P9100- $\alpha$ MeS

**Structure:**

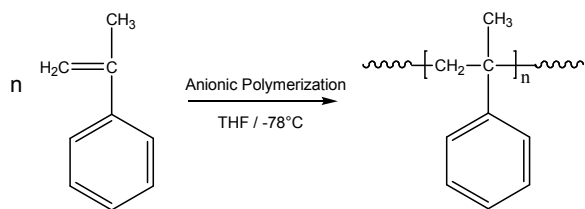


**Composition:**

$M_n \times 10^3$	PDI
1,111.0	1.2
$T_g$ ( $^{\circ}\text{C}$ )	175

**Synthesis Procedure:**

Poly( $\alpha$ -methyl styrene) is synthesized by living anionic polymerization of  $\alpha$ -methyl styrene and the reaction scheme is shown below.



**Characterization:**

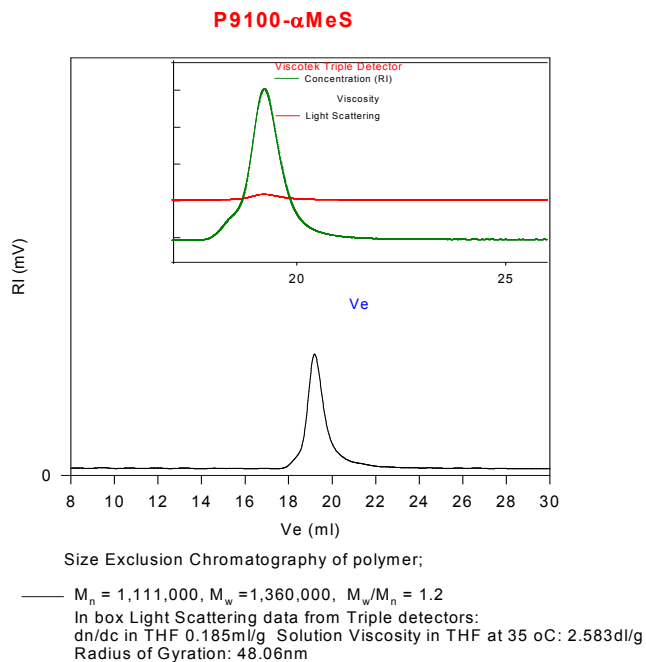
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $10^{\circ}\text{C}/\text{min}$ . The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

**Solubility:**

Poly( $\alpha$ -methyl styrene) is soluble in DMF, THF, toluene and  $\text{CHCl}_3$ . It precipitates from methanol, ethanol, water and hexanes.

**SEC of Homopolymer:**



**DSC thermogram for the polymer:**

